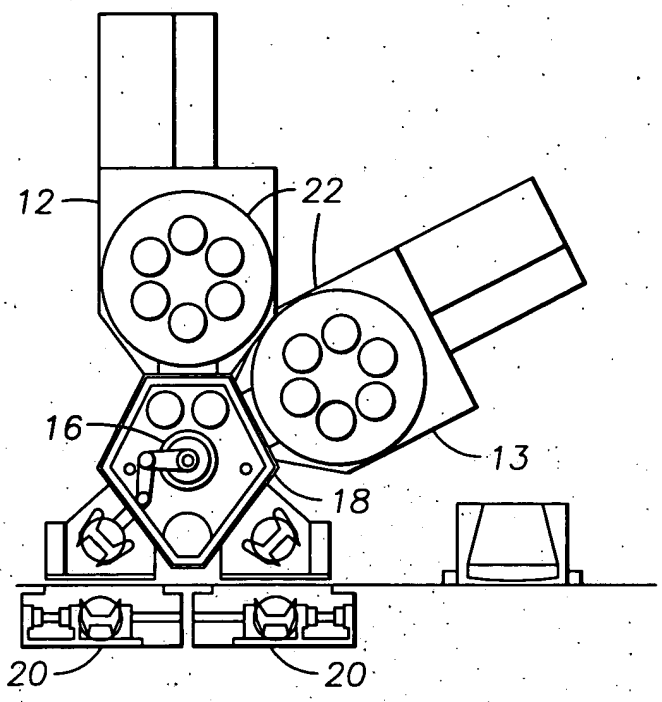

FIG. 1
(PRIOR ART)

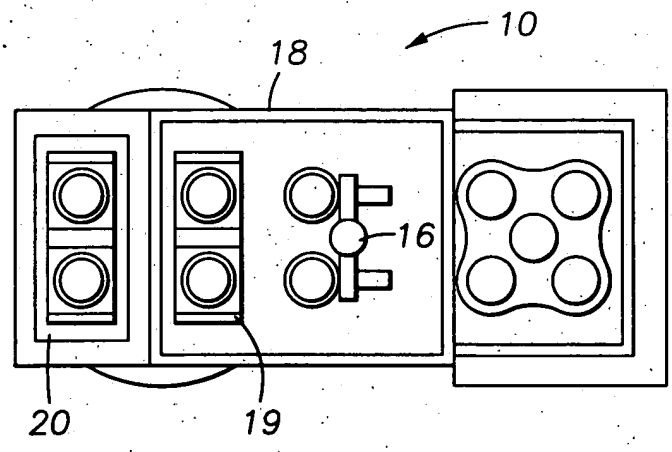

FIG. 2A
(PRIOR ART)

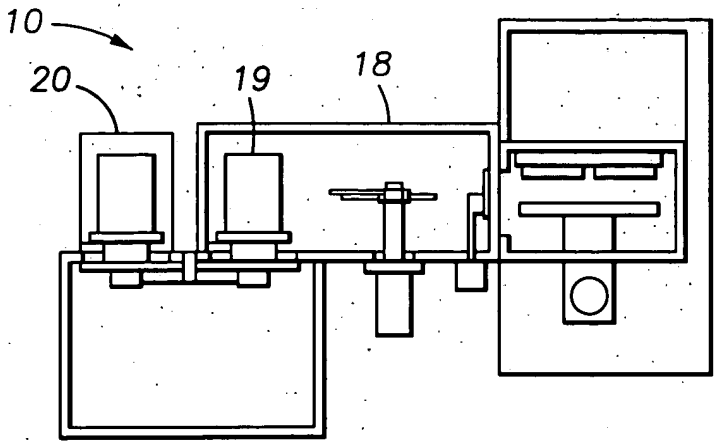

FIG. 2B
(PRIOR ART)

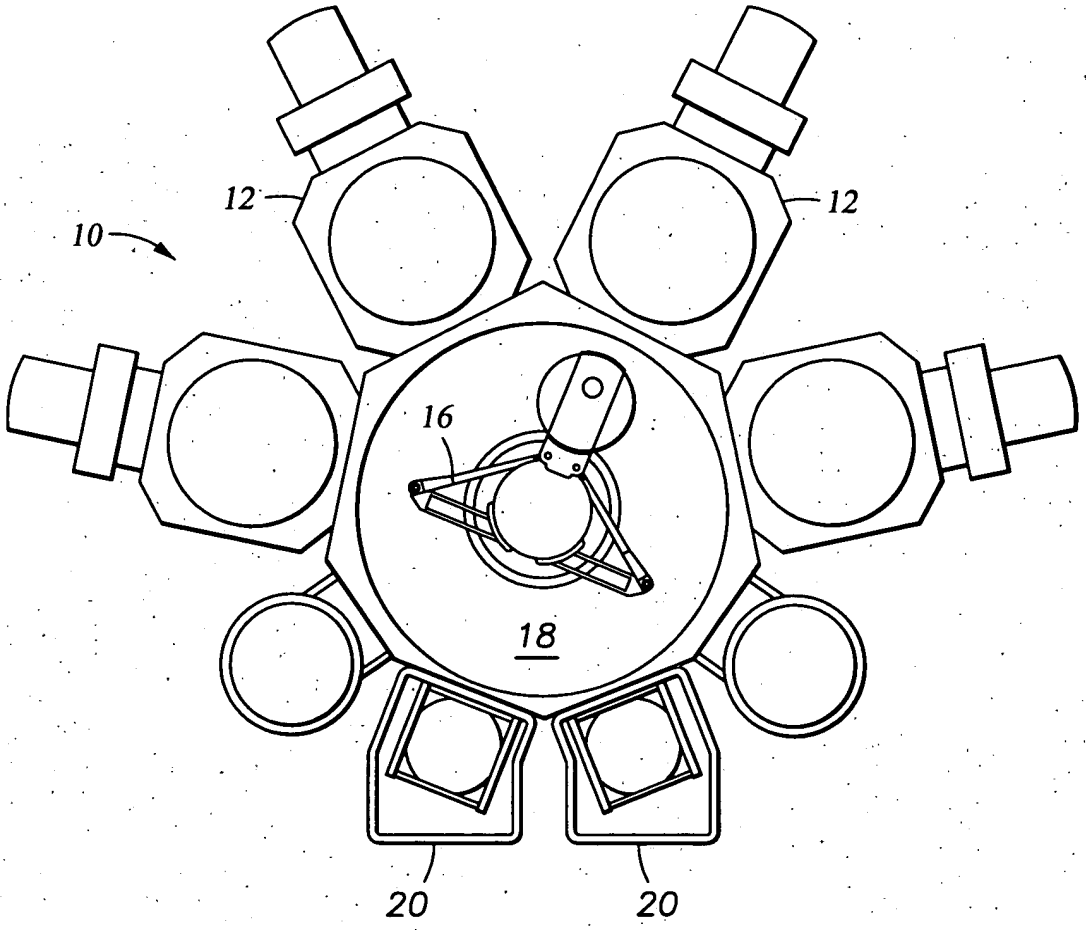

FIG. 3
(PRIOR ART)

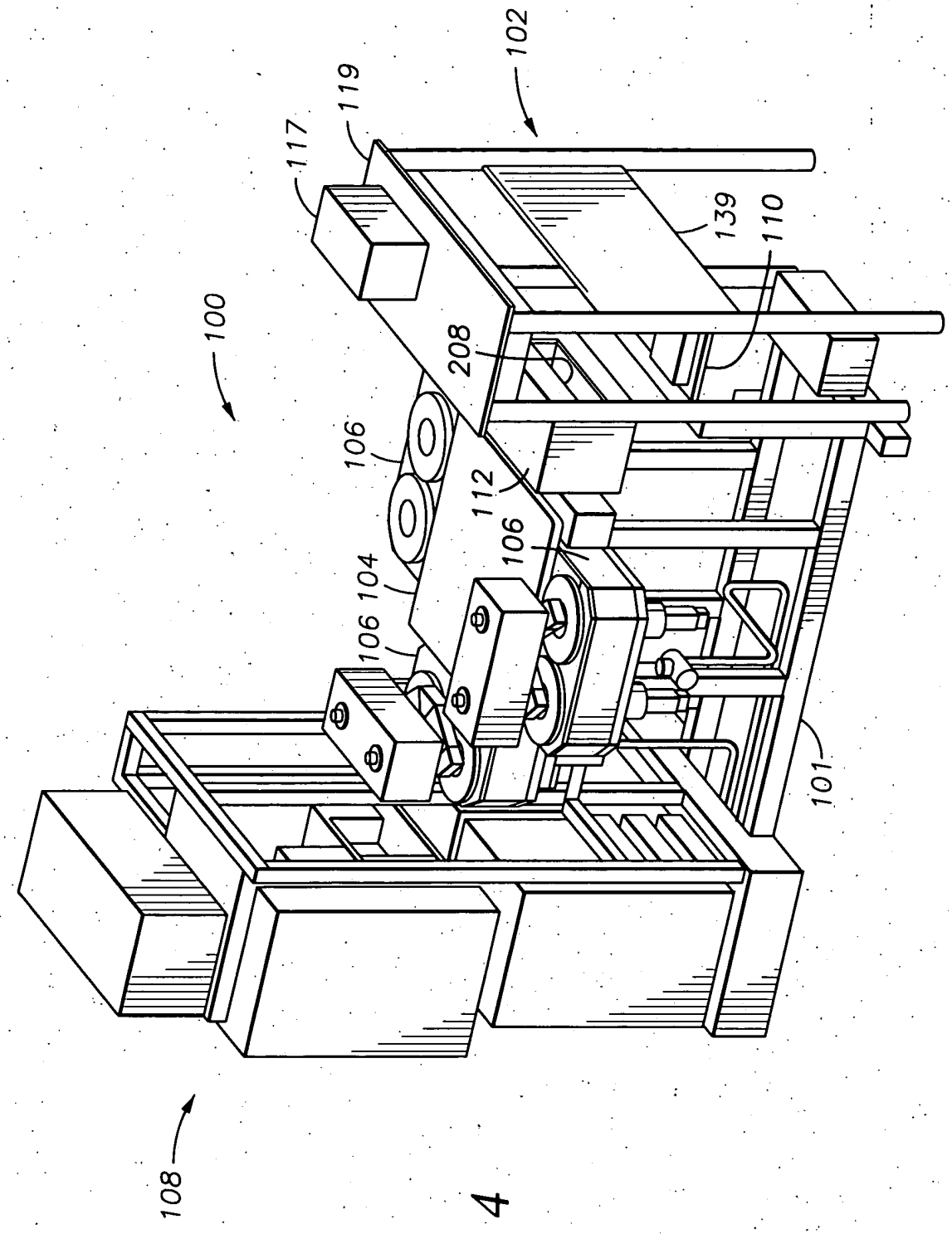

FIG. 4

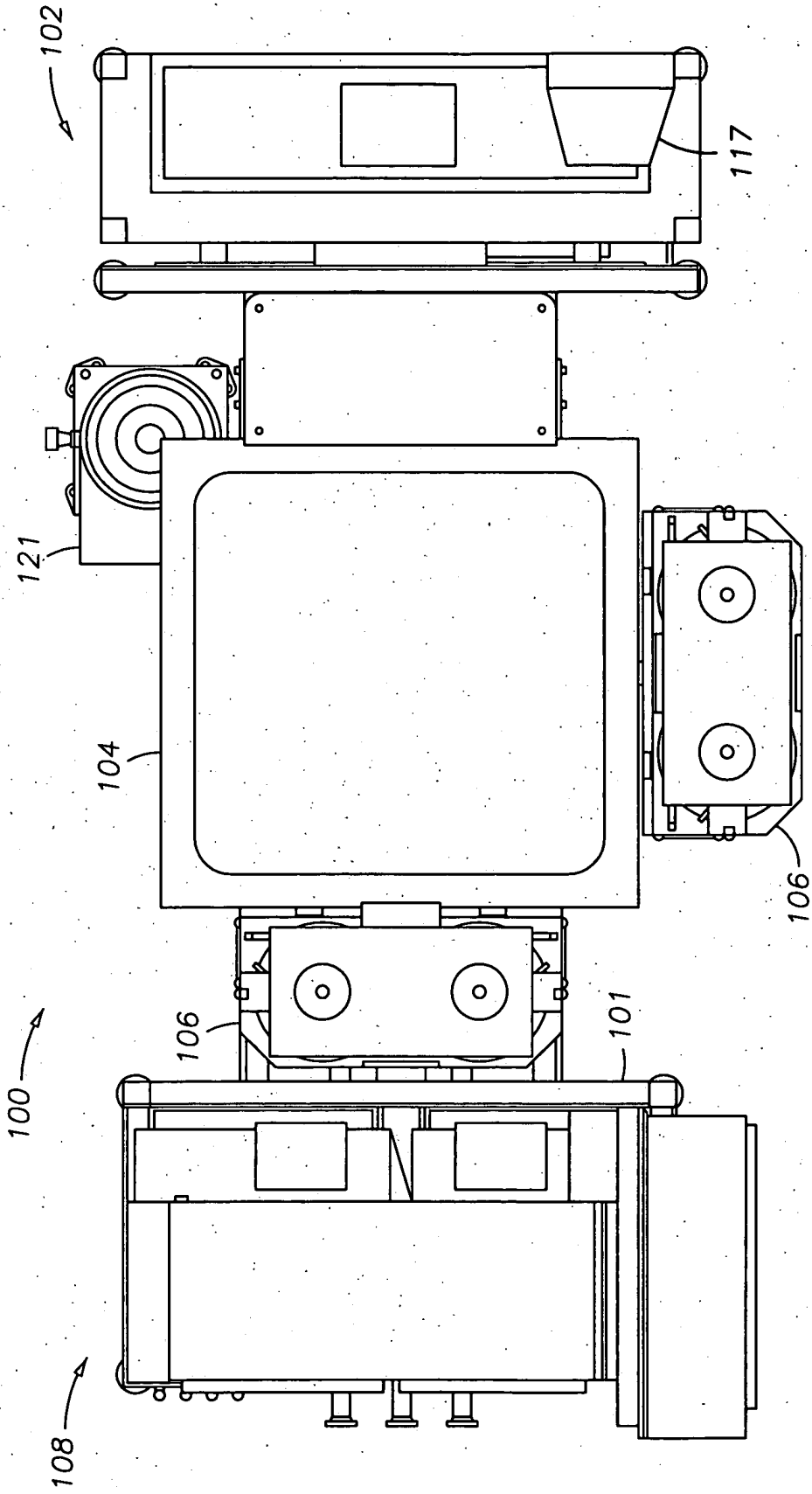

FIG. 5

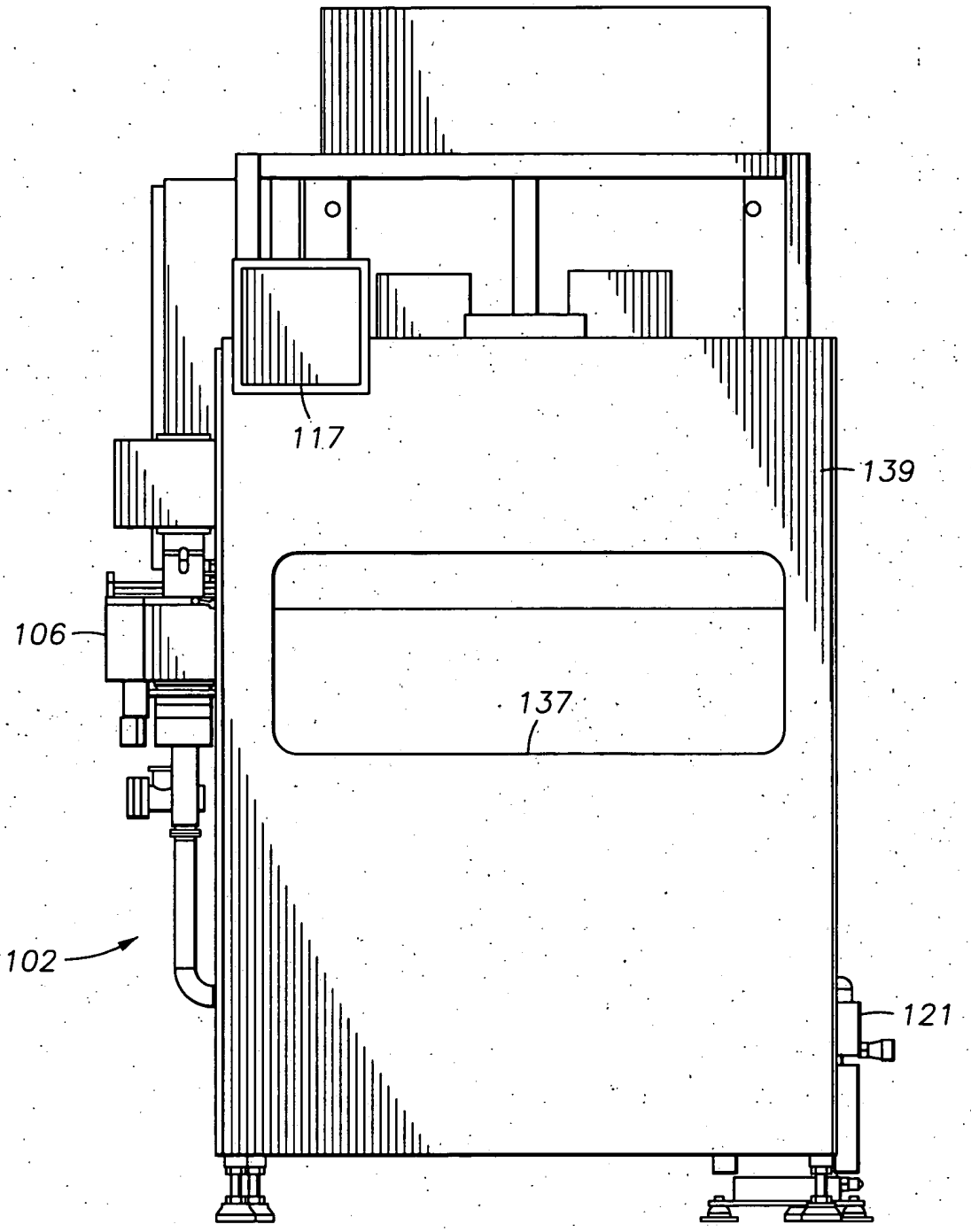

FIG. 6

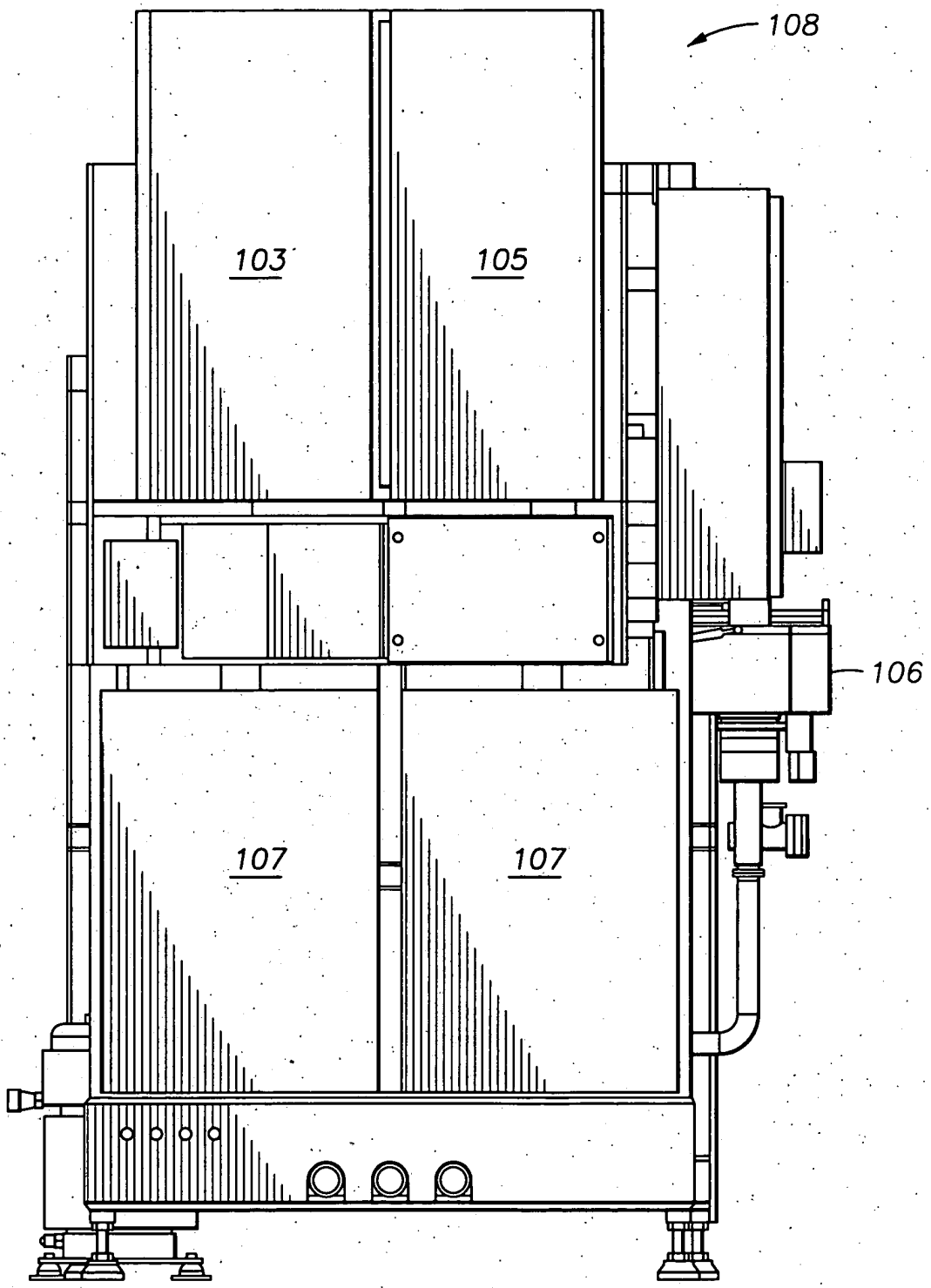

FIG. 7

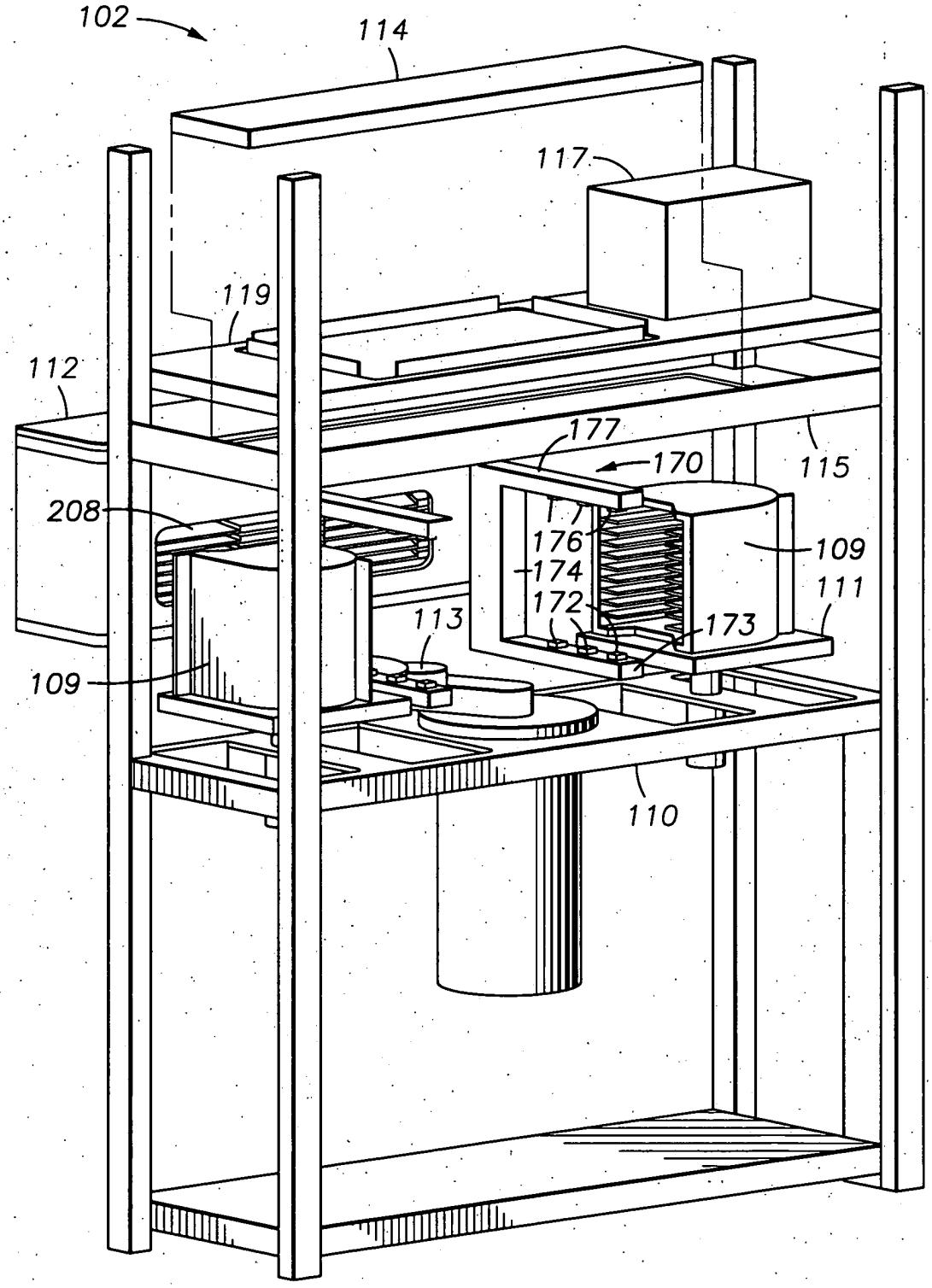
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FIG. 8

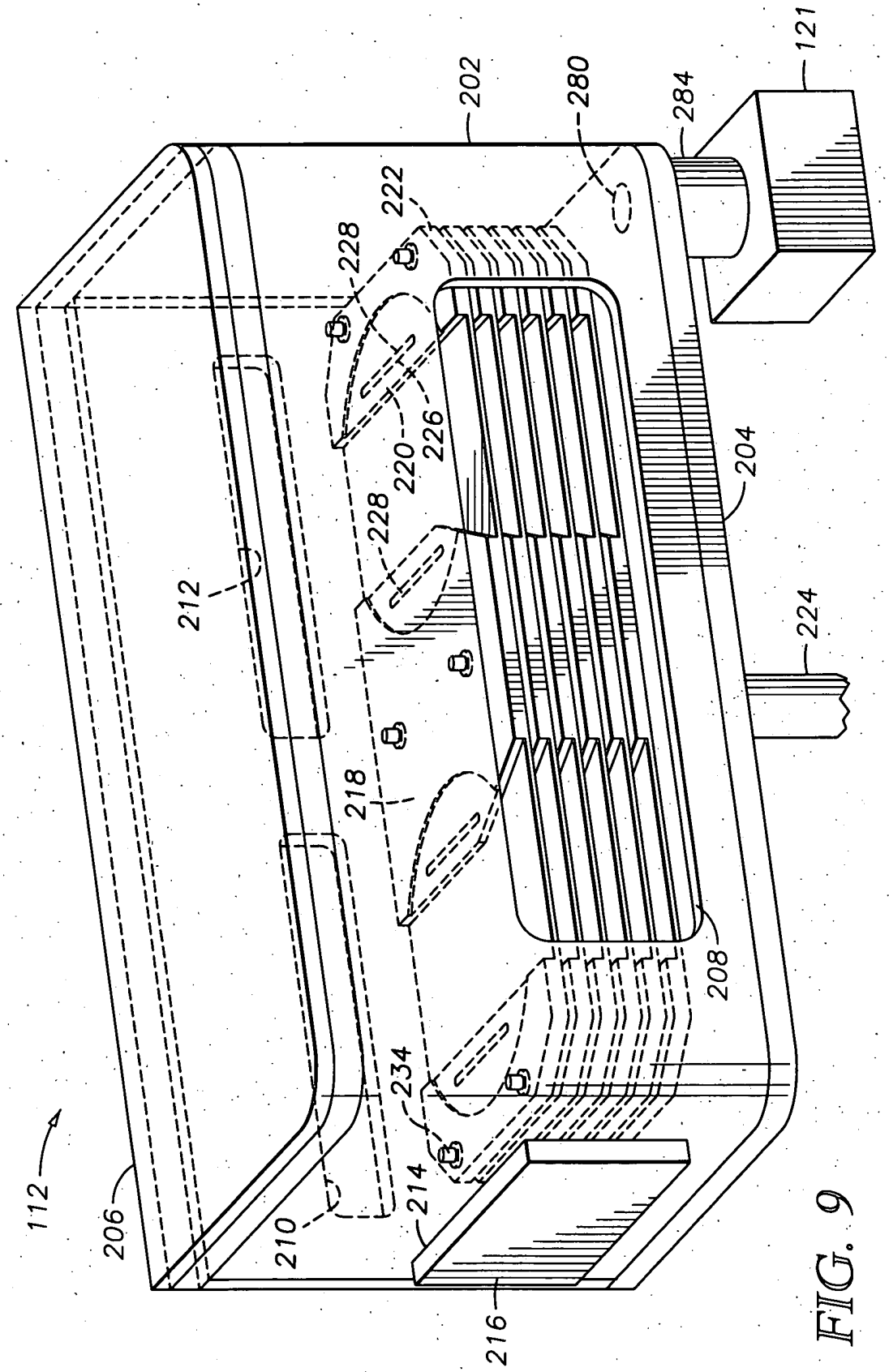
121
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FIG. 9

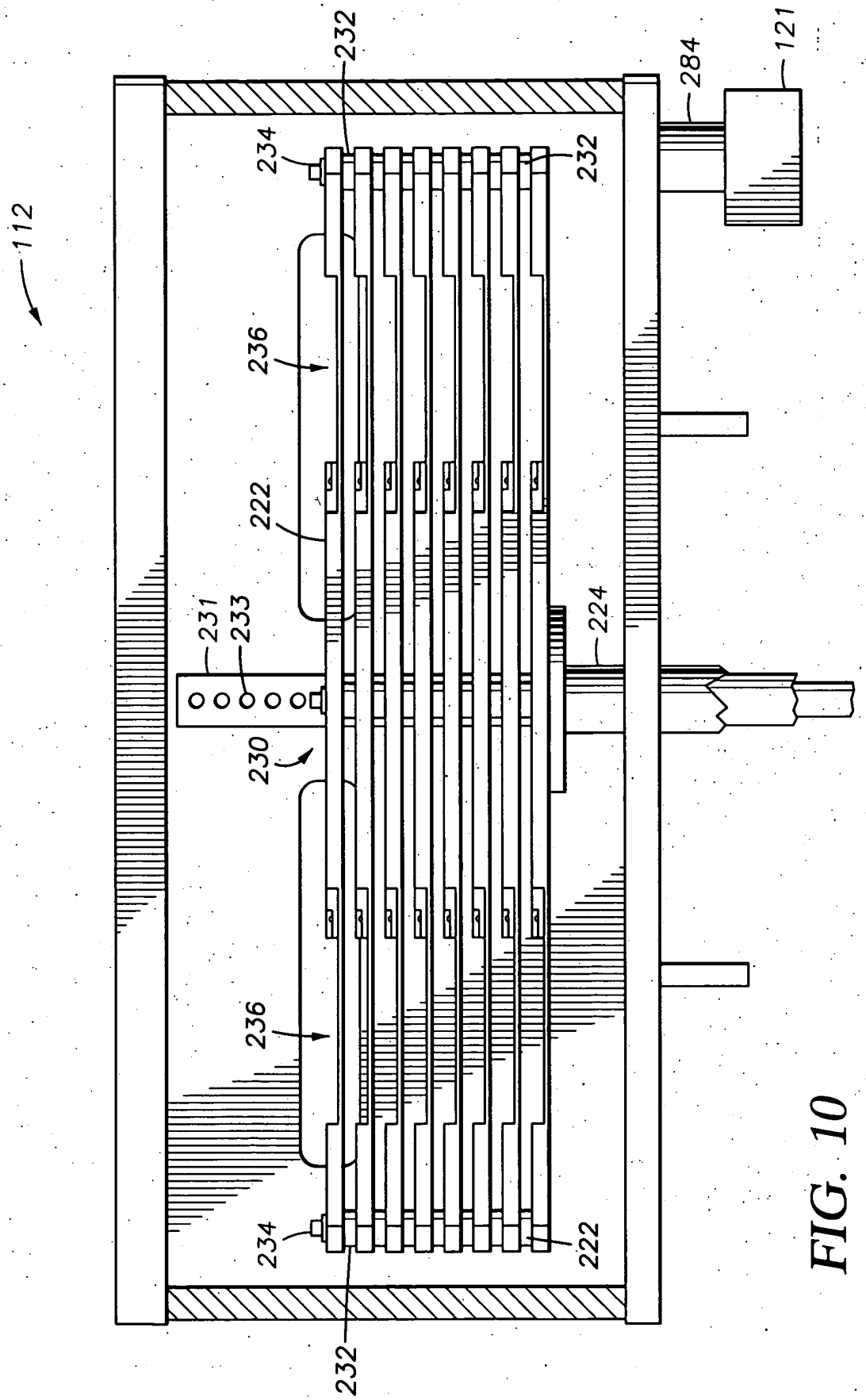


FIG. 10

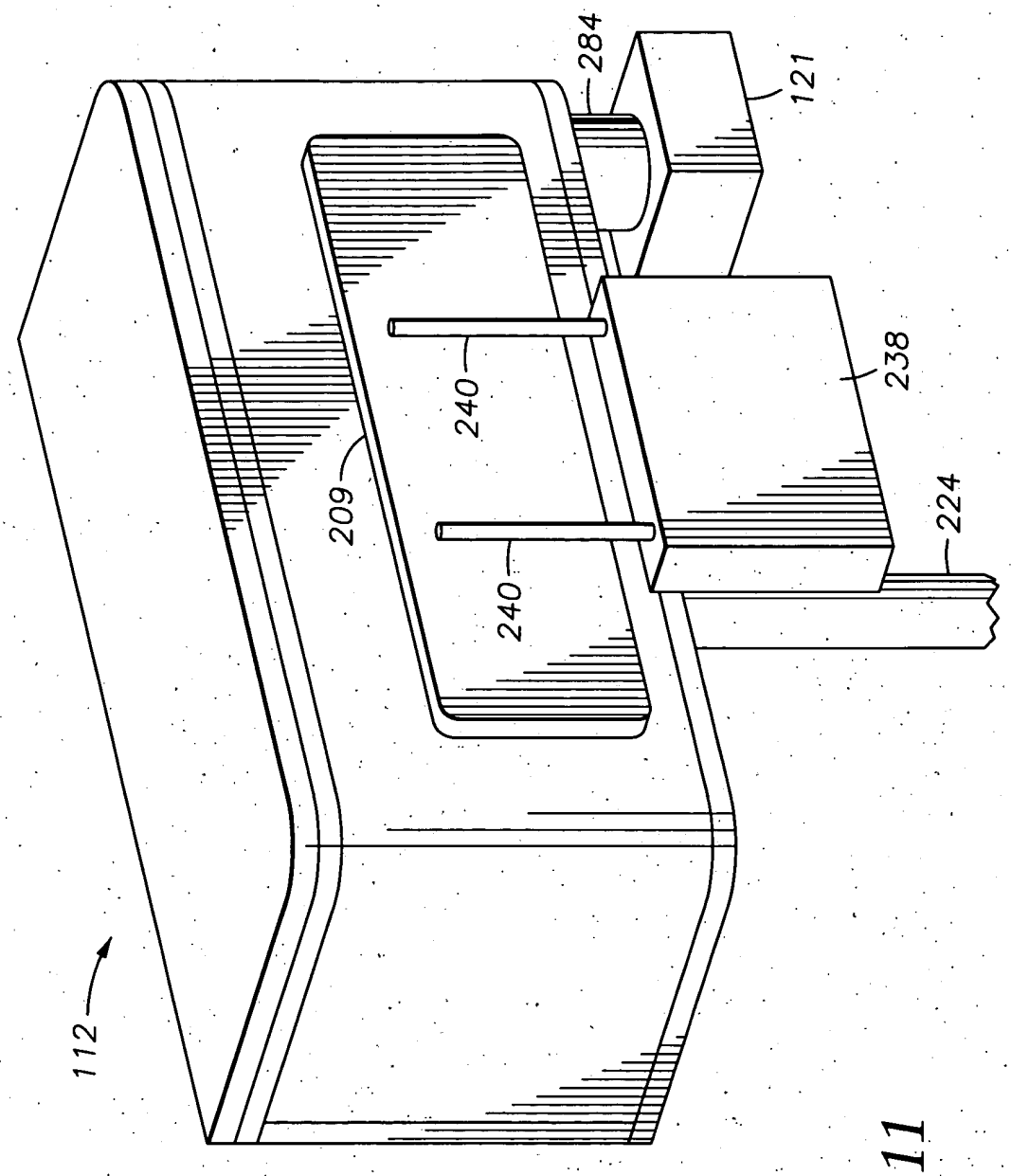
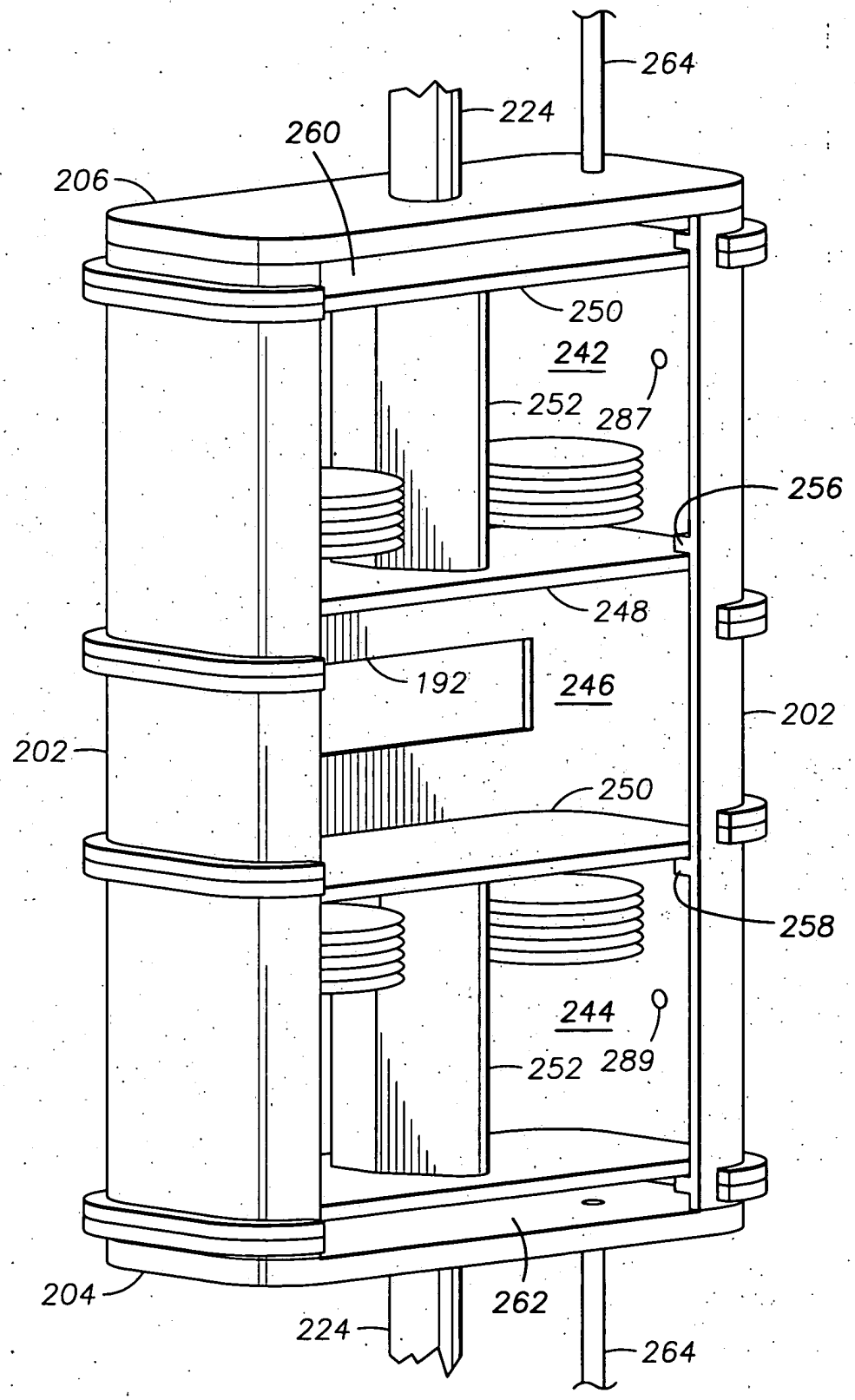


FIG. 11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264

FIG. 12

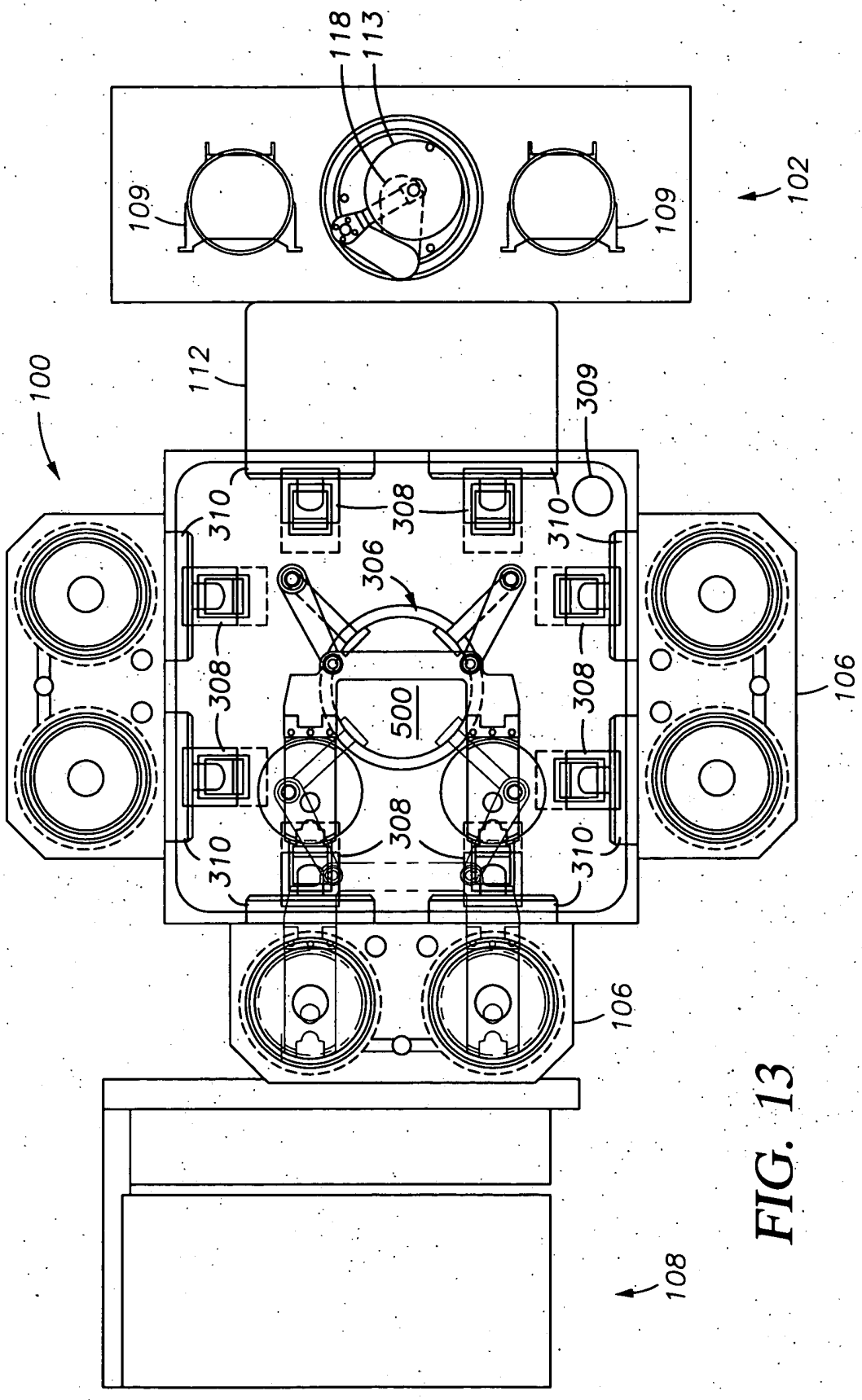
118
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FIG. 13

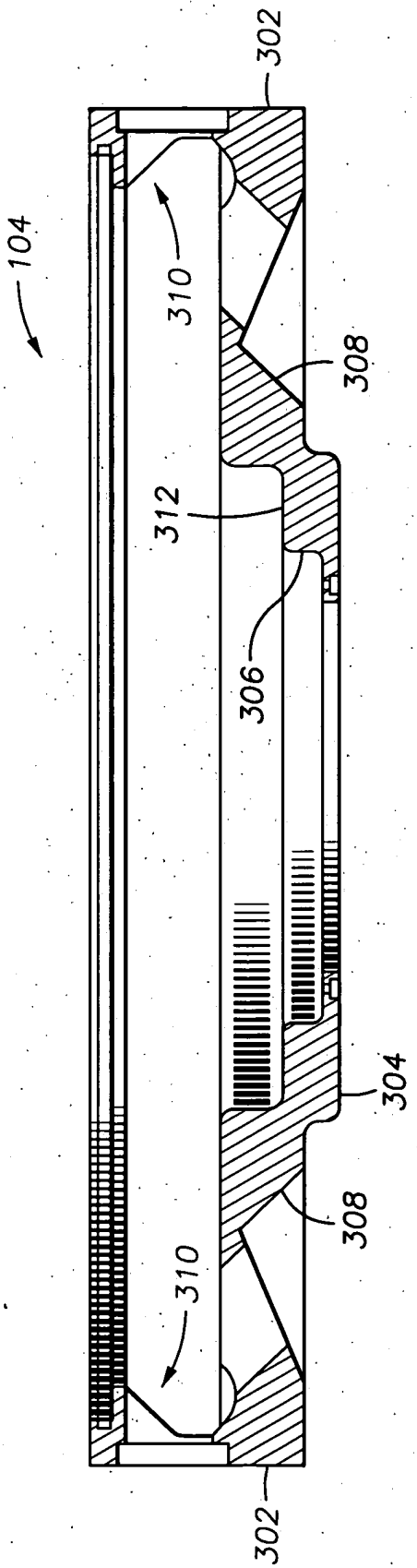

FIG. 14

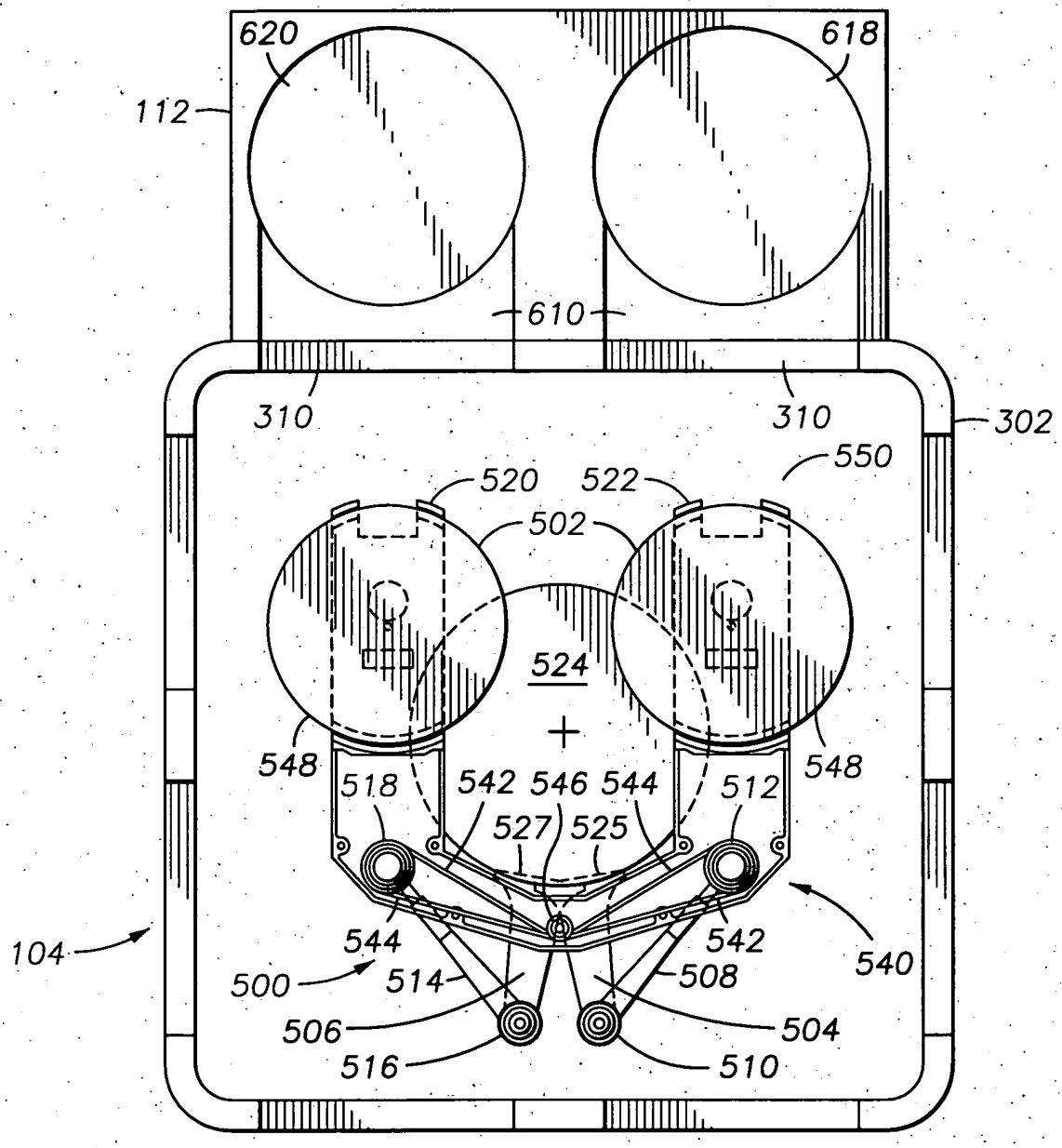
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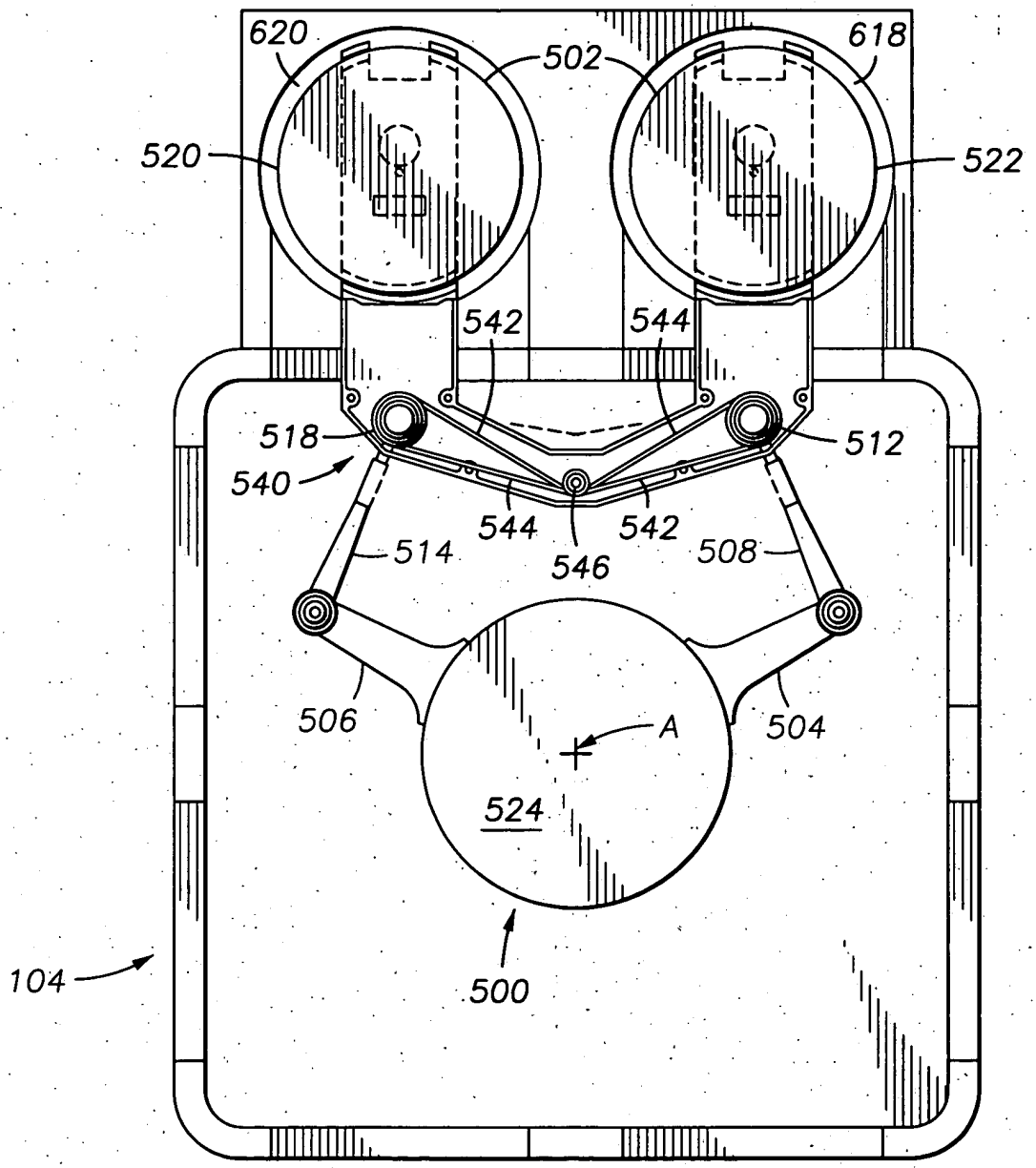
FIG. 15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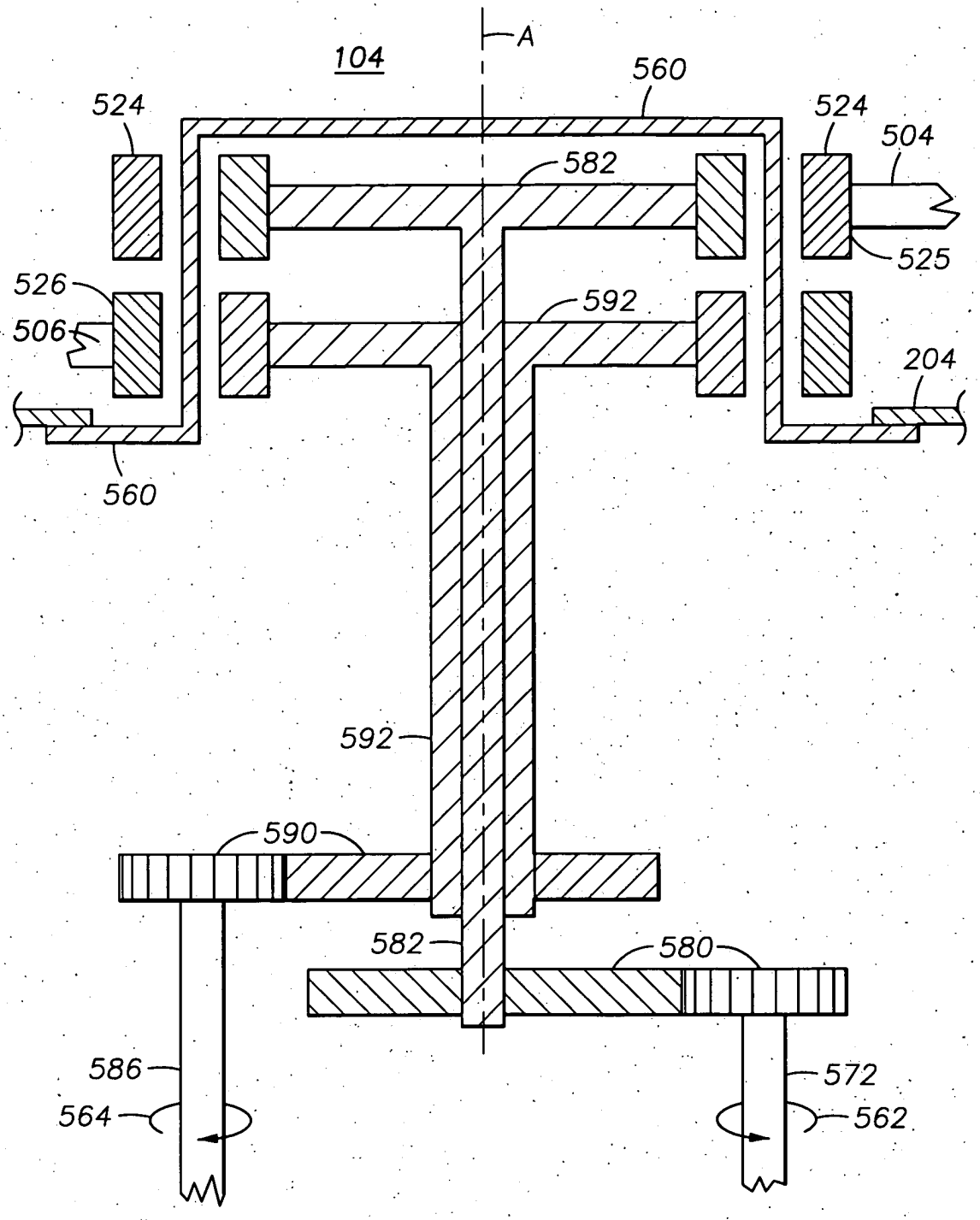
500
104

FIG. 16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582
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564
562

FIG. 17

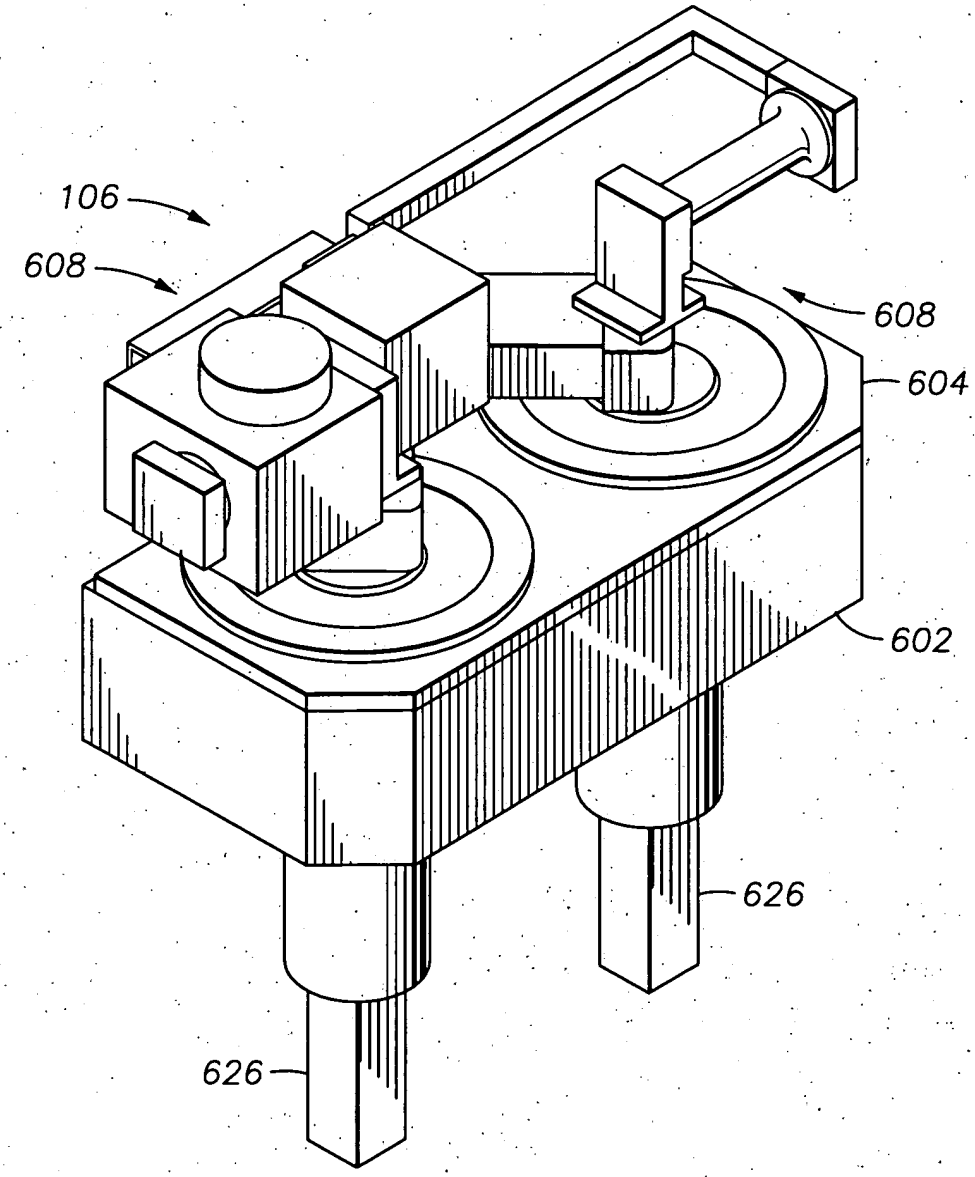

FIG. 18

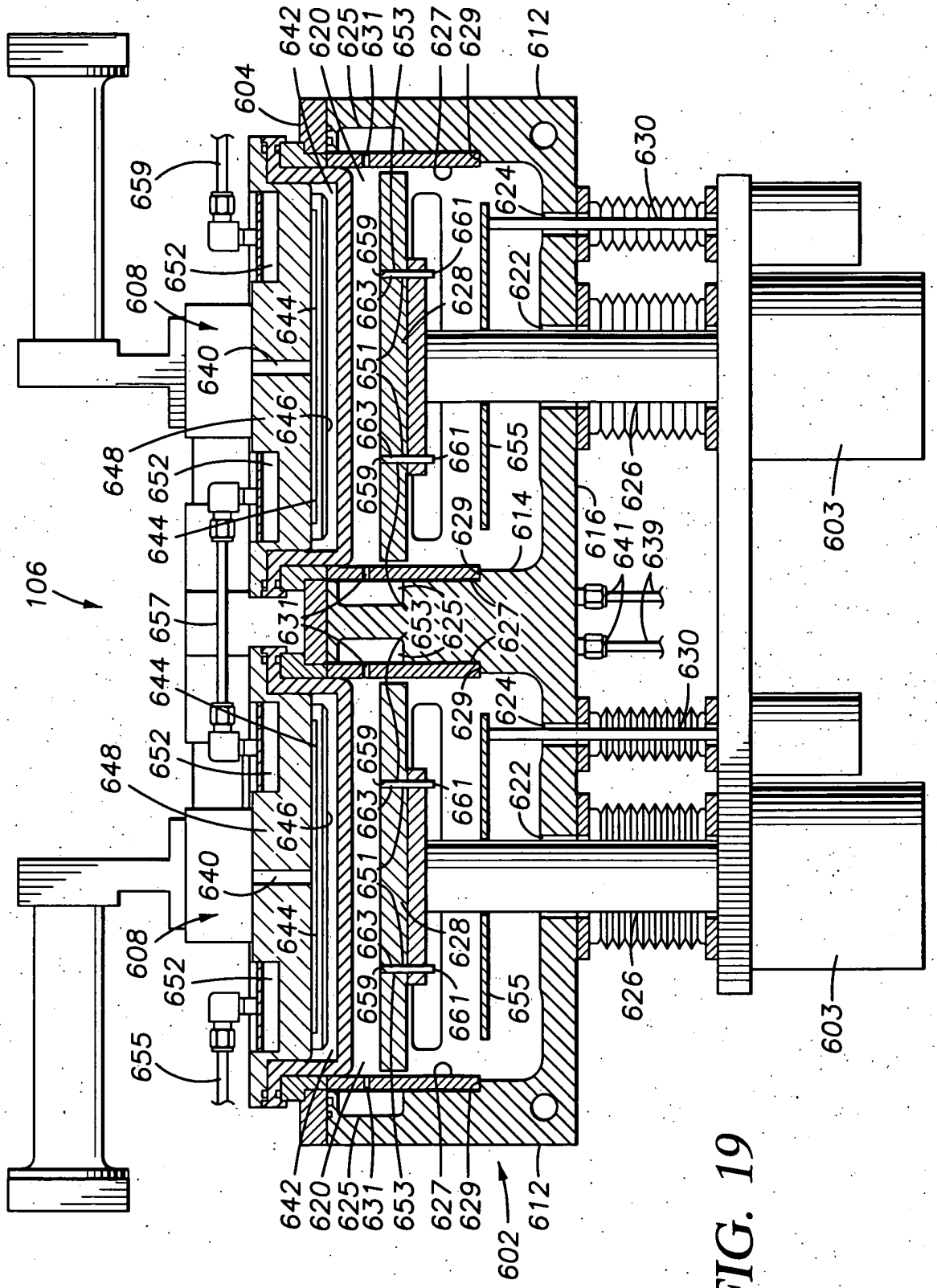
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FIG. 19

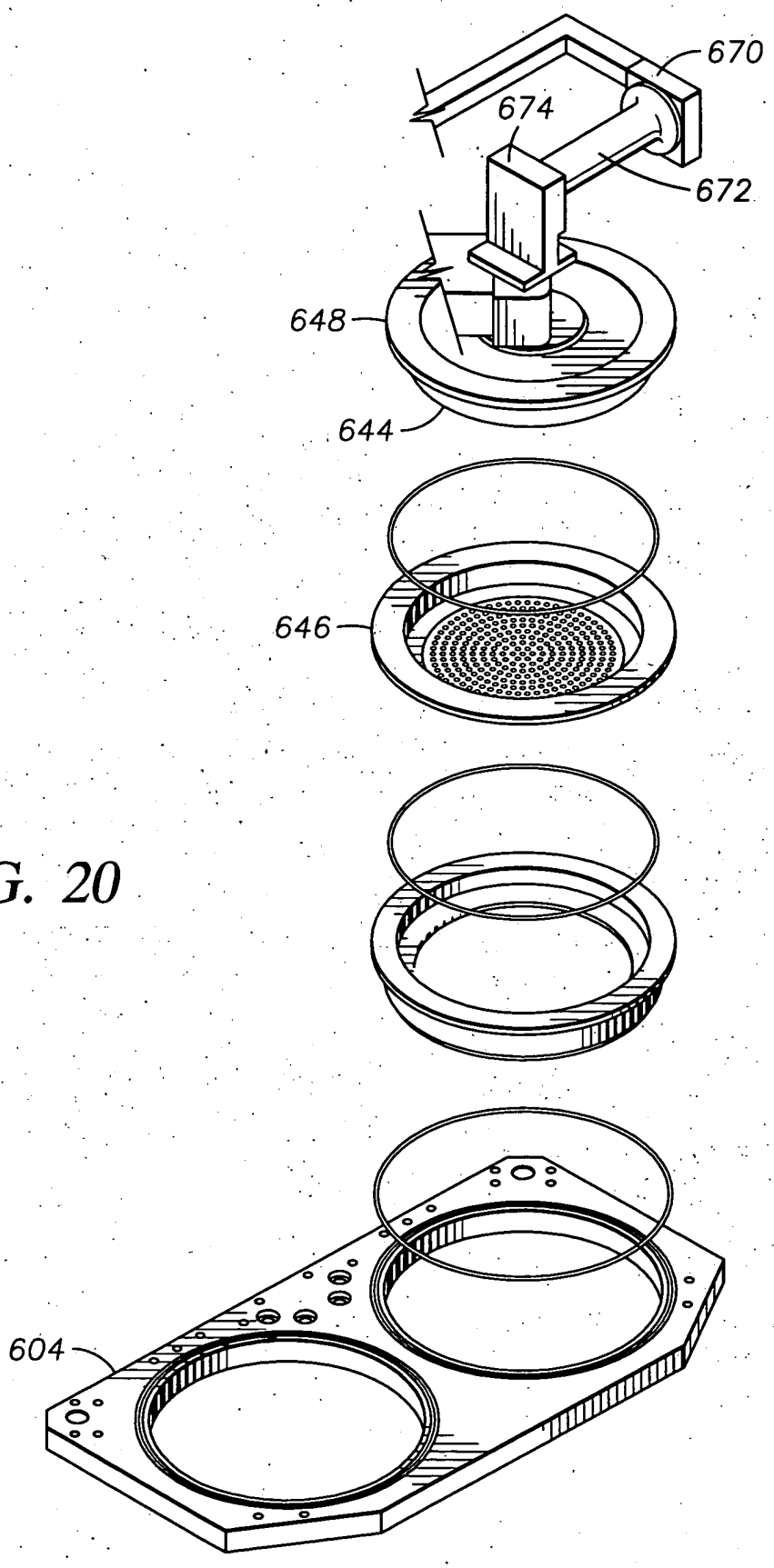


FIG. 20

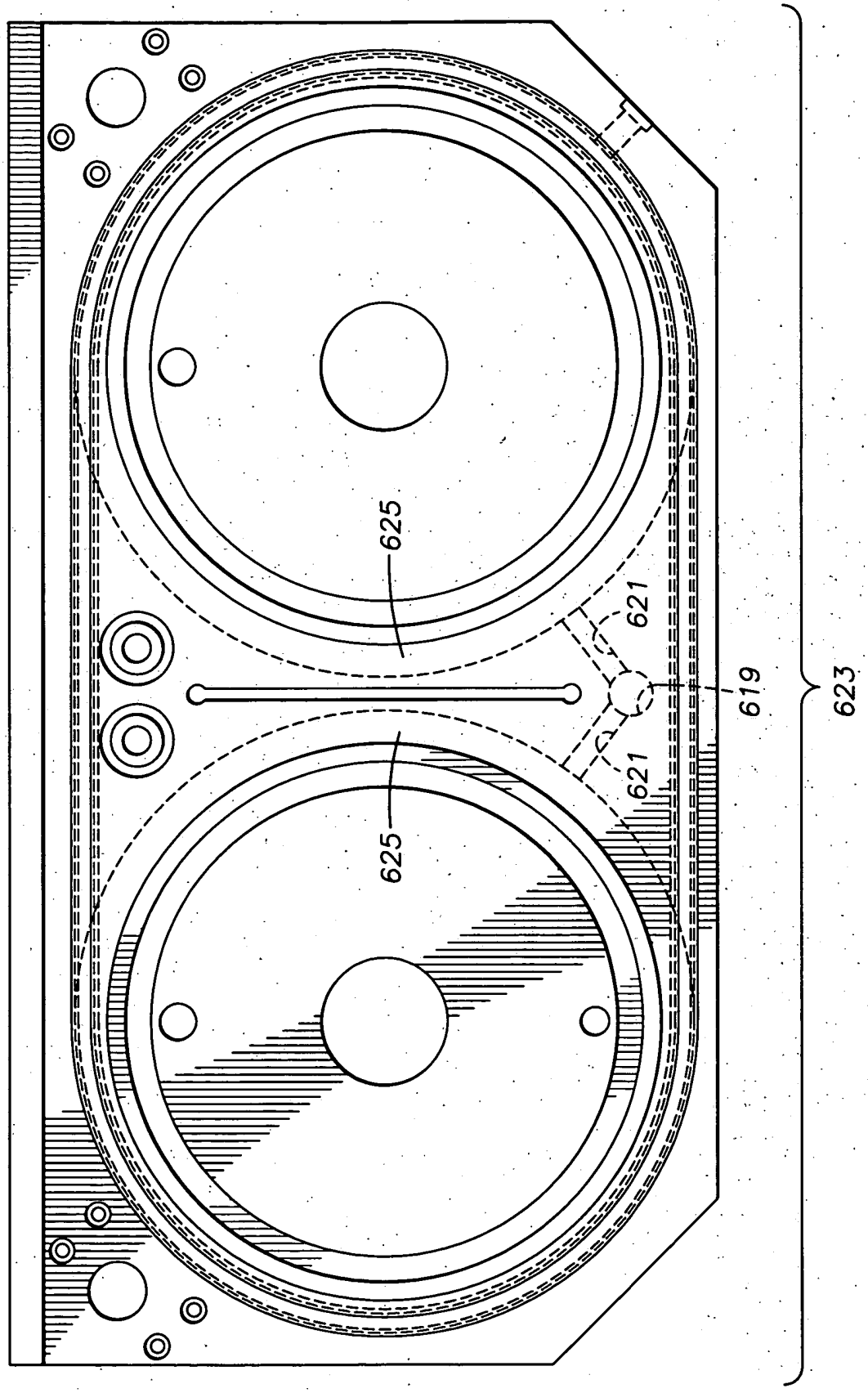
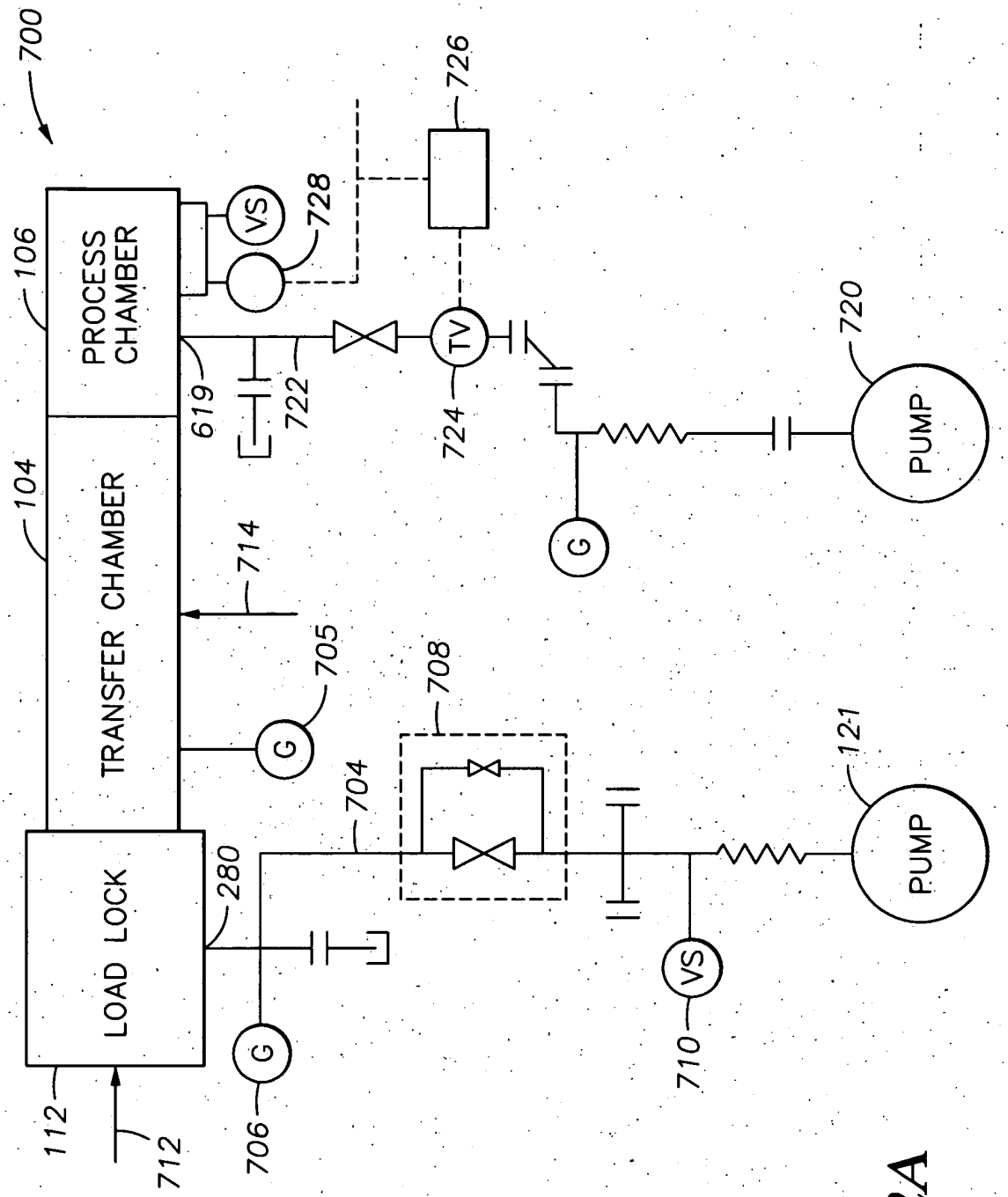


FIG. 21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726
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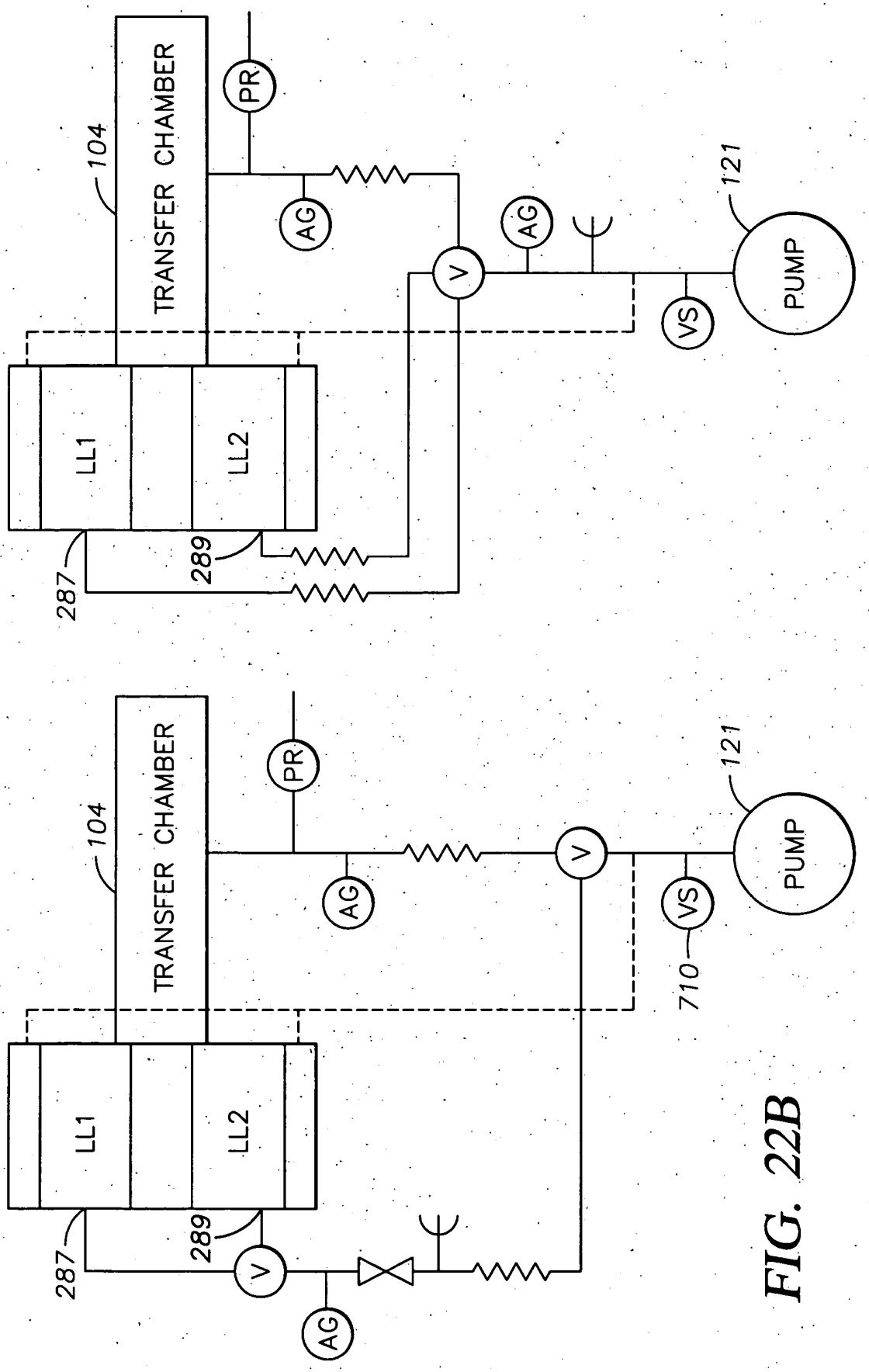
VS
106
PROCESS CHAMBER
619
722
TV
724
720
PUMP
G
104
TRANSFER CHAMBER
714
705
708
704
121
PUMP
280
LOAD LOCK
VS
710
G
706
112
712

FIG. 22A


TRANSFER CHAMBER
104
PR
AG
V
AG
121
PUMP
VS
LL1
LL2
287
289
TRANSFER CHAMBER
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AG
V
121
PUMP
VS
710
LL1
LL2
287
289
V
AG

FIG. 22B

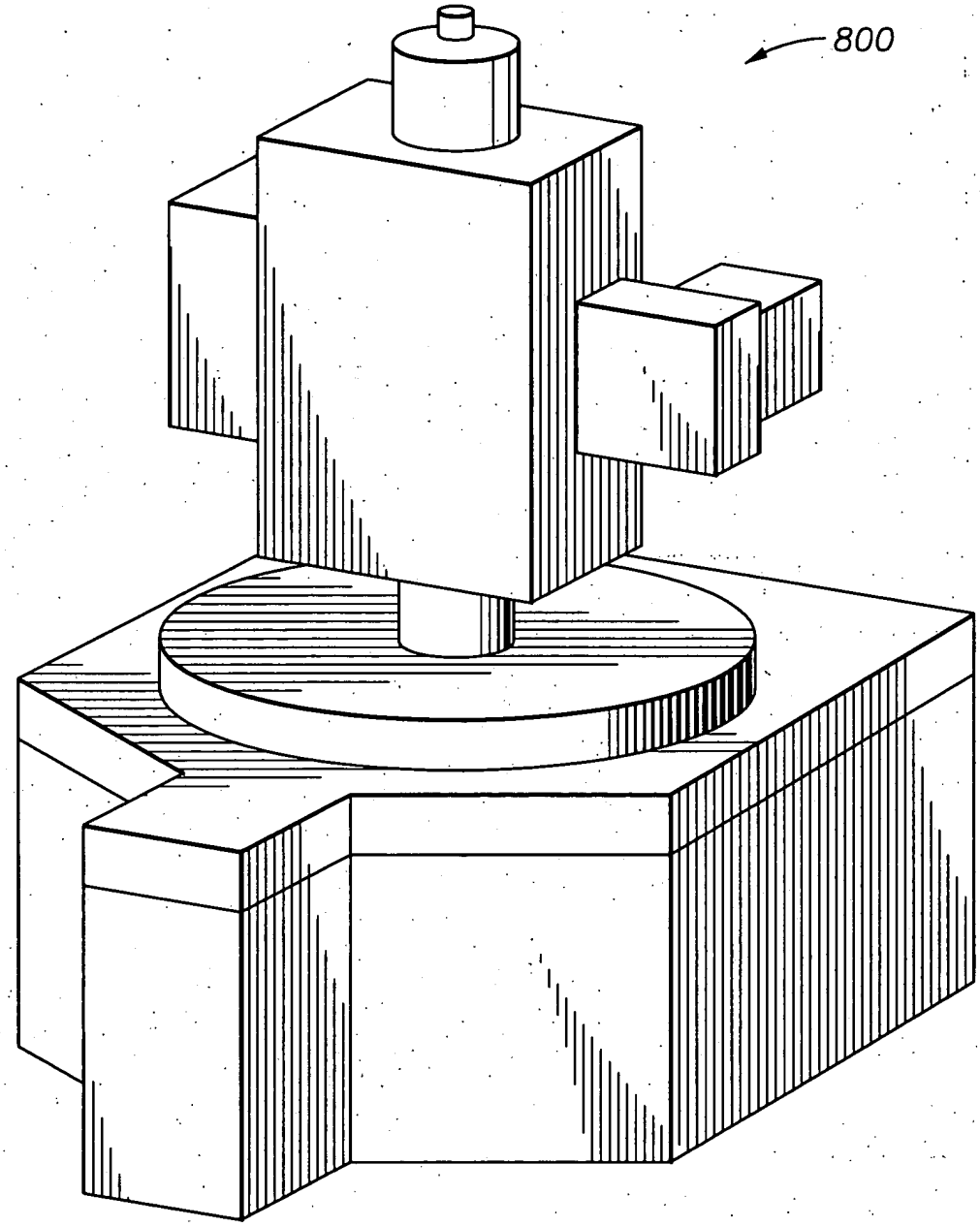


FIG. 23

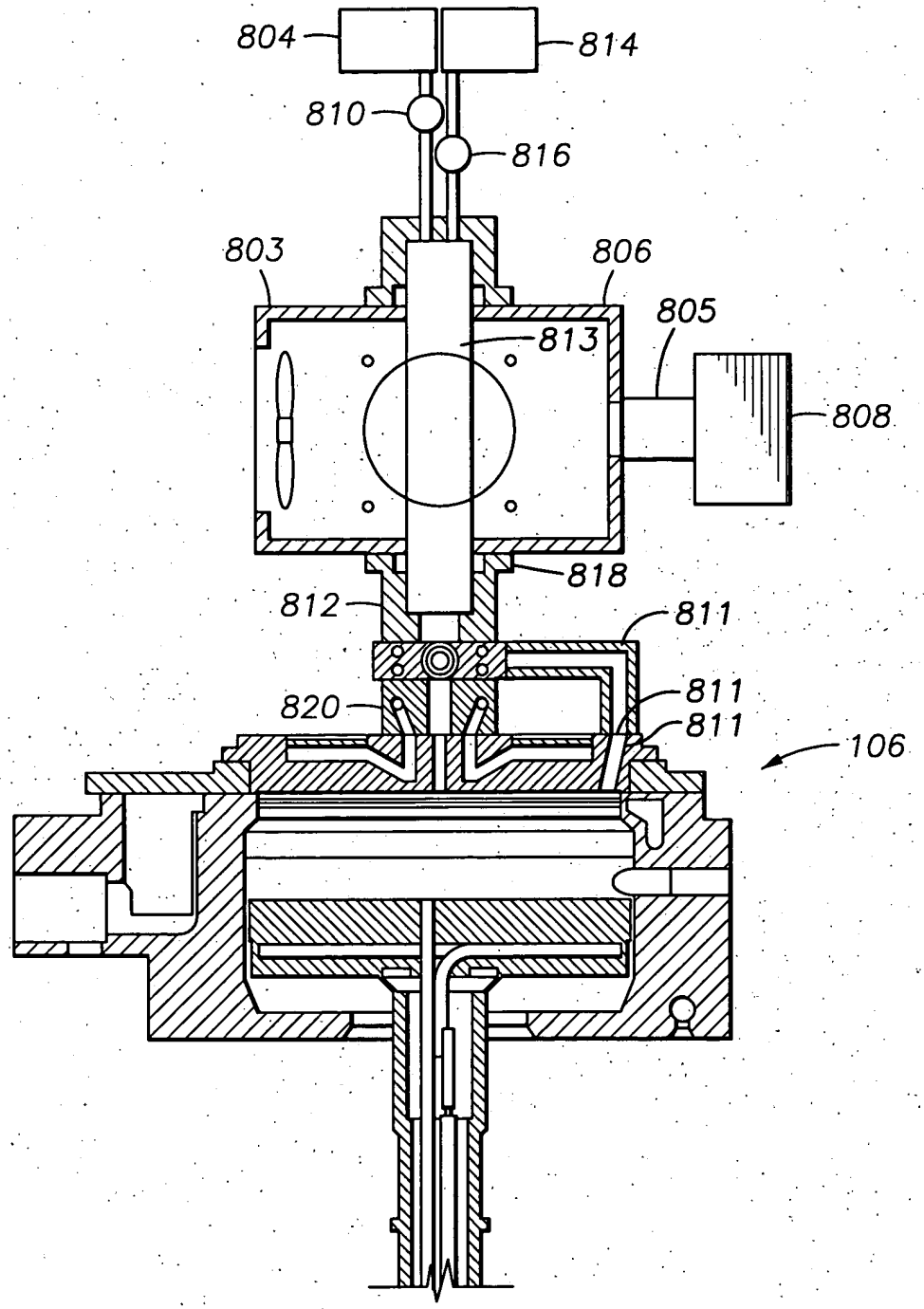
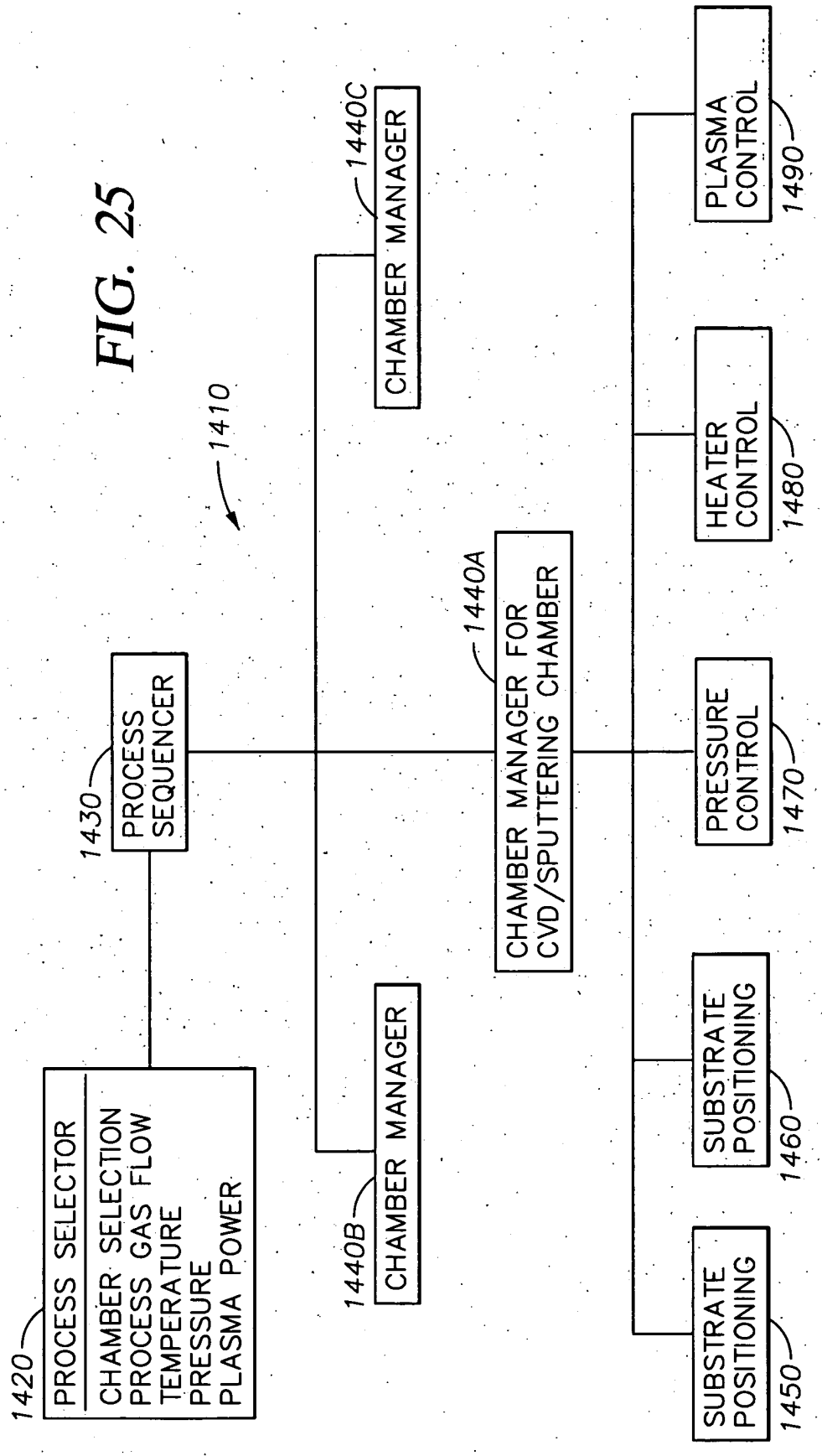


FIG. 24

FIG. 25


1410
1420
PROCESS SELECTOR
CHAMBER SELECTION
PROCESS GAS FLOW
TEMPERATURE
PRESSURE
PLASMA POWER
1430
PROCESS SEQUENCER
1440A
CHAMBER MANAGER FOR CVD/SPUTTERING CHAMBER
1440B
CHAMBER MANAGER
1440C
CHAMBER MANAGER
1450
SUBSTRATE POSITIONING
1460
SUBSTRATE POSITIONING
1470
PRESSURE CONTROL
1480
HEATER CONTROL
1490
PLASMA CONTROL

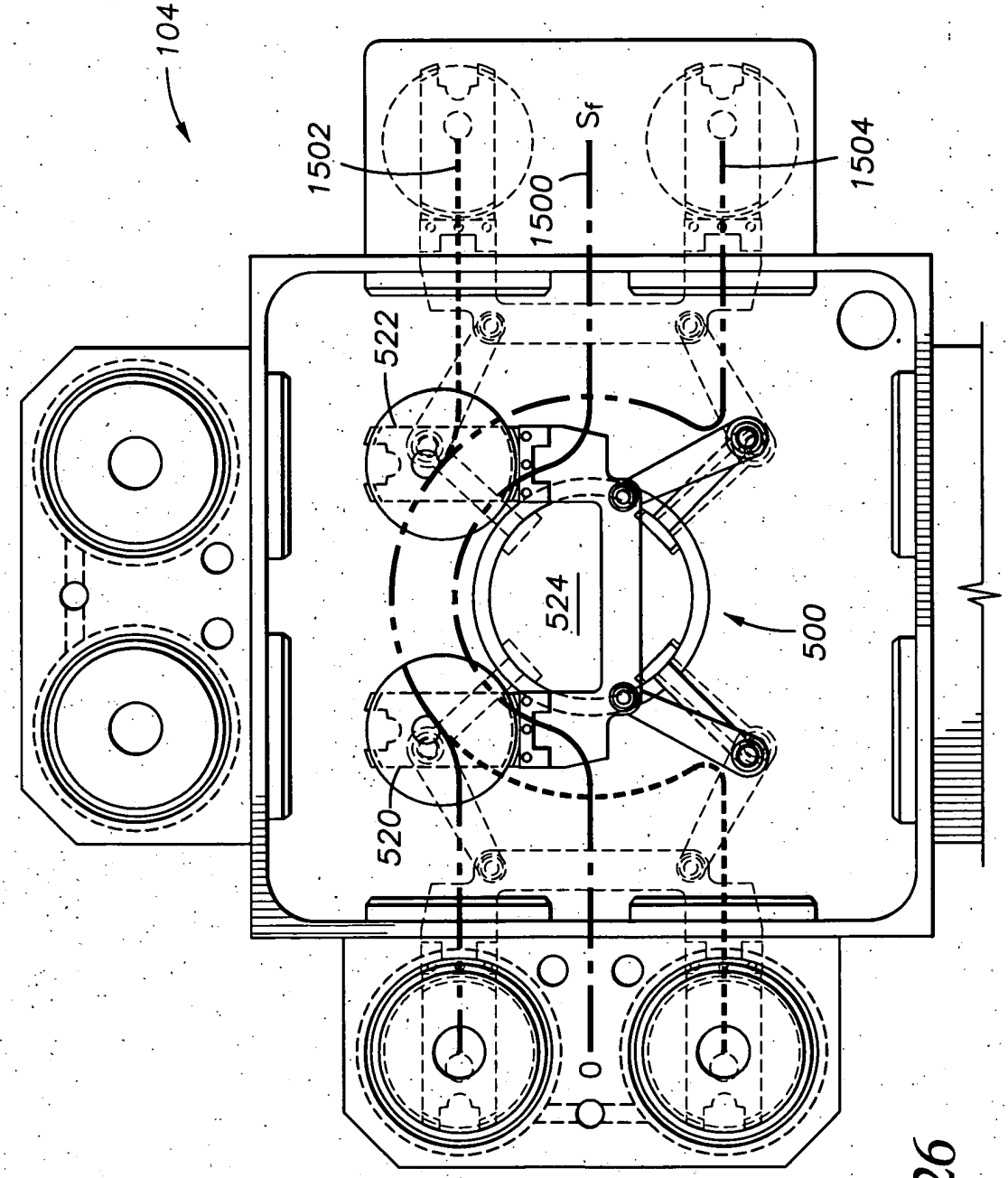


FIG. 26

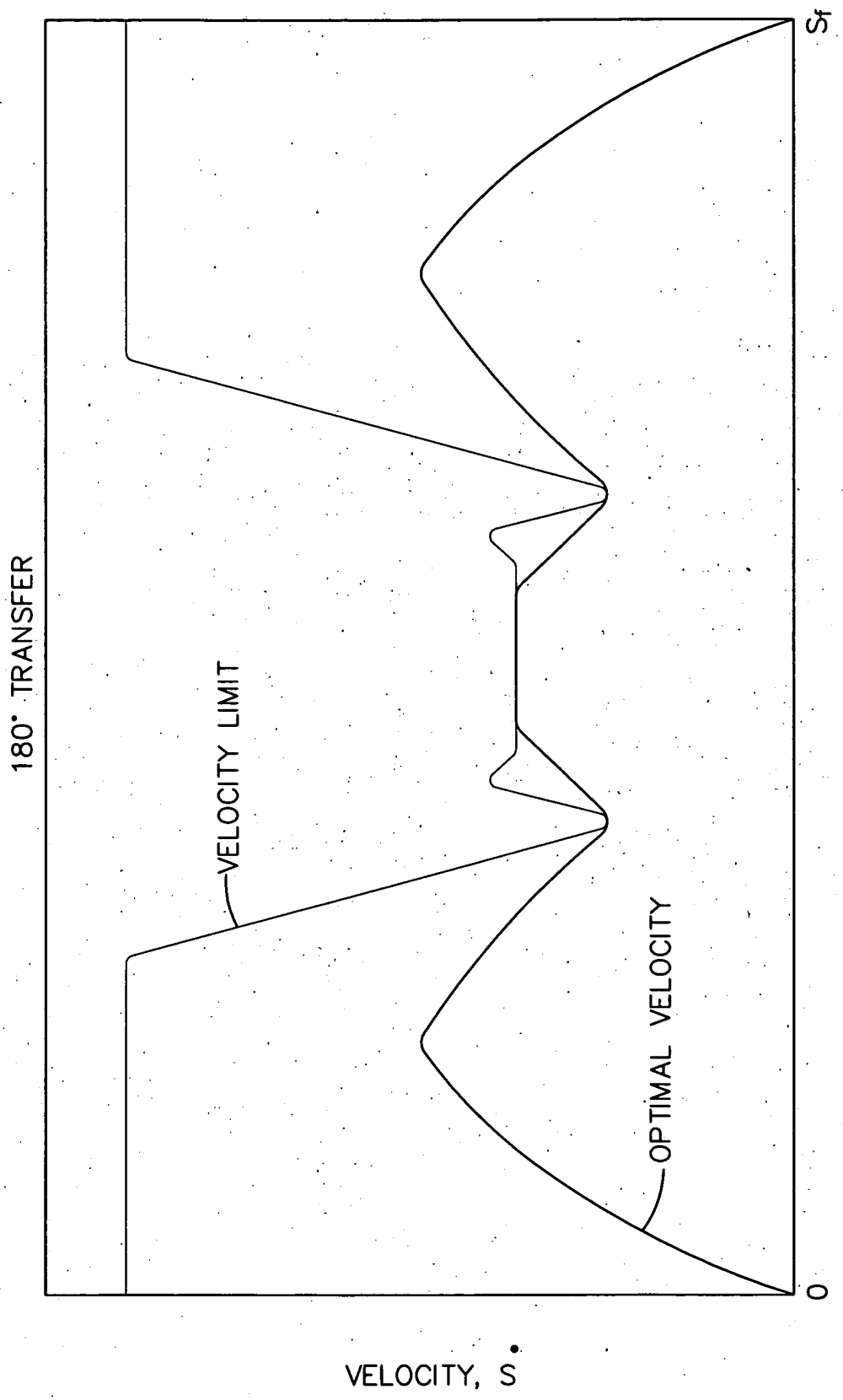

180° TRANSFER
VELOCITY LIMIT
OPTIMAL VELOCITY
Sf
0
POSITION, S
VELOCITY, Ṡ

FIG. 27

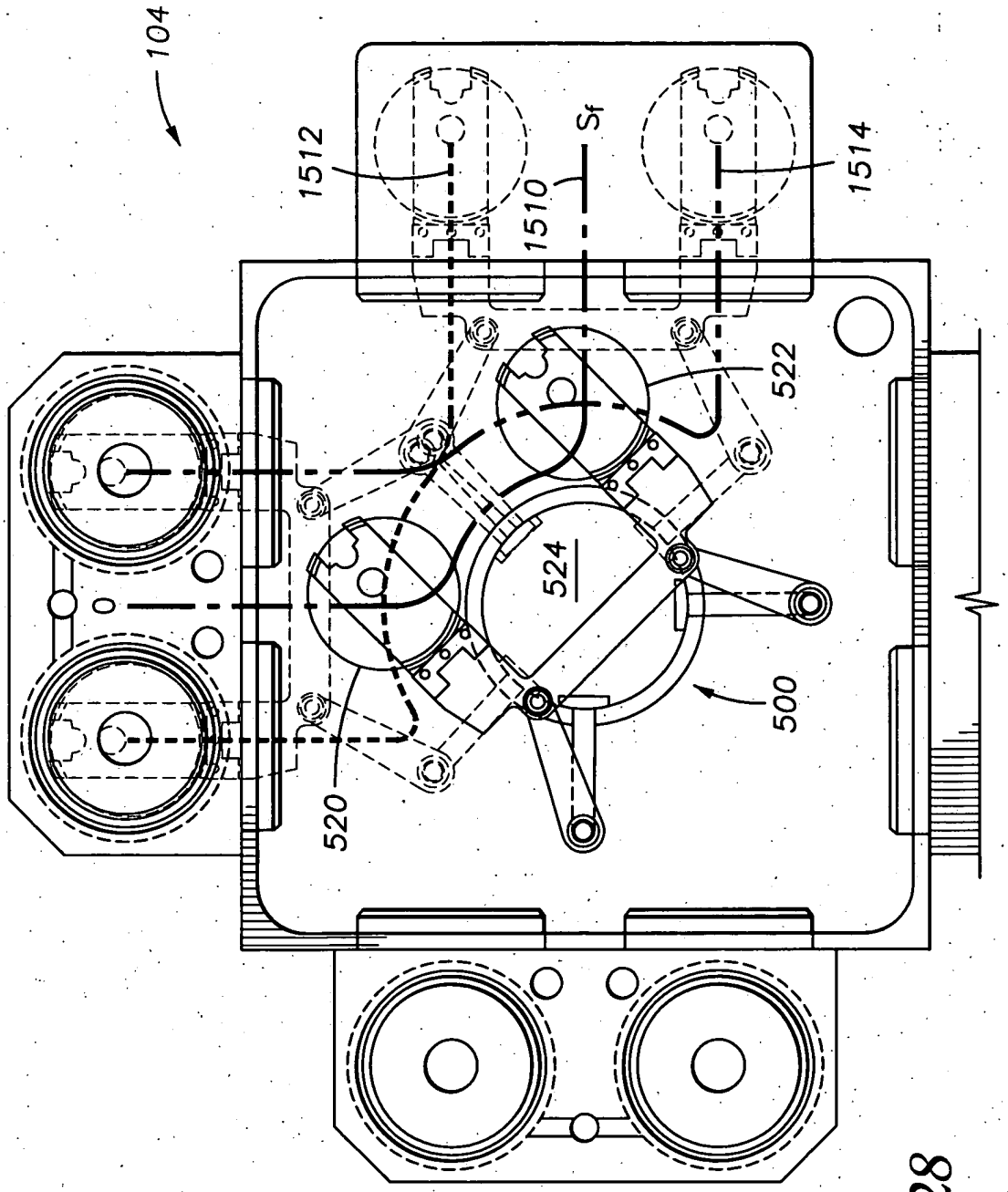


FIG. 28

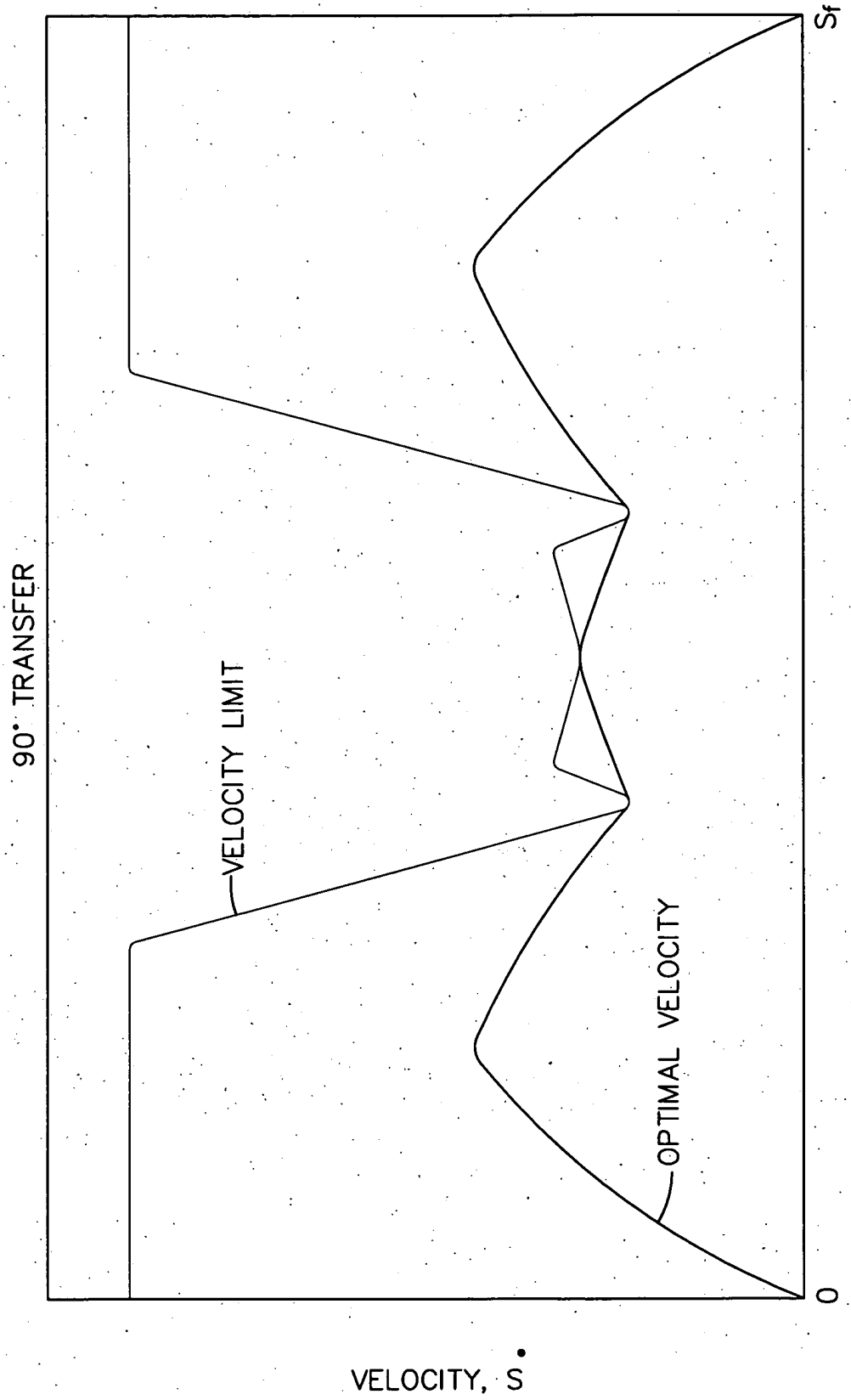

90° TRANSFER
VELOCITY LIMIT
OPTIMAL VELOCITY
Sf
0
POSITION, S
VELOCITY, Ṡ

FIG. 29